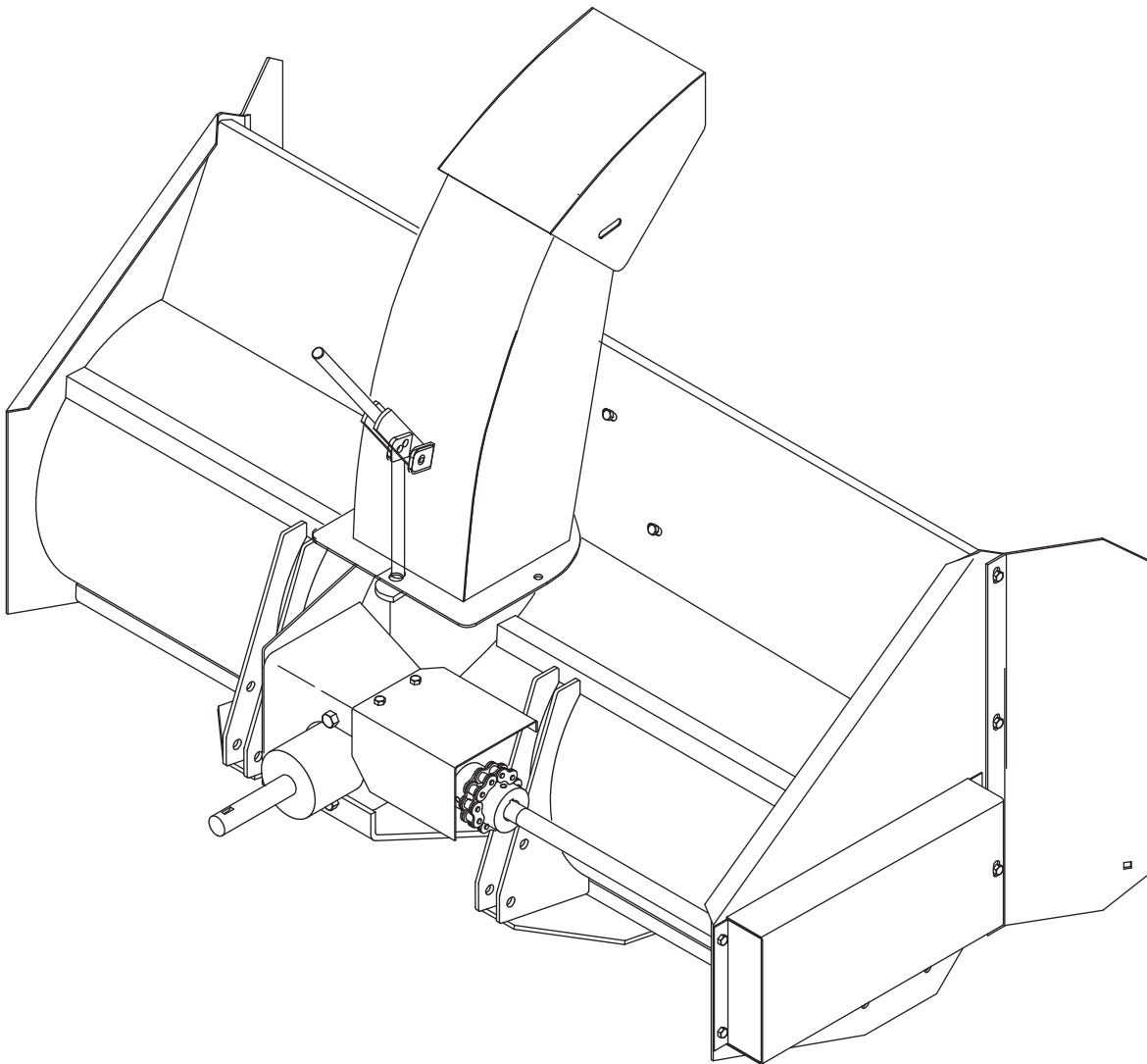


# WOODS SNOWTHROWER

ST500

For F-Series Mow'n Machine Power Units



12030809  
(Rev. 3/13/2009)

**WOODS®**

OPERATOR'S MANUAL

## TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Woods® dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

**The dealer must complete the Product Registration online at the Woods Dealer Website** or complete the mail-in form included with the Operator's Manual. If using the mail-in form, the dealer is to return the prepaid postage portion to Woods, give one copy to the customer, and retain one copy. **Failure to register the product does not diminish customer's warranty rights.**

## TO THE OWNER:

Read this manual before operating your Woods equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your dealer. To locate your nearest dealer, check the Dealer Locator at [www.WoodsEquipment.com](http://www.WoodsEquipment.com), or in the United States and Canada call 1-800-319-6637.

The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment.

For service, your authorized Woods dealer has trained mechanics, genuine Woods service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Woods service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

**Model:** \_\_\_\_\_ **Date of Purchase:** \_\_\_\_\_

**Serial Number: (see Safety Decal section for location)** \_\_\_\_\_

Provide this information to your dealer to obtain correct repair parts.

Throughout this manual, the term **NOTICE** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING**, and **DANGER** are used in conjunction with the Safety-Alert Symbol (a triangle with an exclamation mark) to indicate the degree of hazard for items of personal safety.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**IMPORTANT  
or NOTICE**

Is used to address practices not related to personal injury.

**NOTE**

Indicates helpful information.

**WOODS®**

**ALITEC™**  
**BMP®**  
**CENTRAL FABRICATORS®**  
**GANNON®**  
**GILL®**  
**WAIN-ROY®**  
**WOODS®**

## 2 Introduction

Gen'l (Rev. 2/19/2008)

# TABLE OF CONTENTS

INTRODUCTION .....	2
GENERAL INFORMATION .....	3
SAFETY RULES .....	4
SAFETY DECALS .....	6
OPERATION .....	7
OWNER SERVICE .....	8
ASSEMBLY .....	9
PARTS LISTS .....	12
BOLT TORQUE CHARTS .....	14
BOLT SIZE CHART & ABBREVIATIONS .....	15
REPLACEMENT PARTS WARRANTY .....	16
PRODUCT WARRANTY .....	INSIDE BACK COVER

## GENERAL INFORMATION



### WARNING

■ **Some illustrations in this manual show the snowthrower with safety shields removed to provide a better view. The snowthrower should never be operated with any safety shielding removed.**

The purpose of this manual is to assist you in operating and maintaining your snowthrower. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field

experience and engineering data. Some information may be general in nature, due to unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of printing. However, due to possible inline production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.



### ¡LEA EL INSTRUCTIVO!

**Si no lee Ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad.**



**This Operator's Manual should be regarded as part of the machine. Suppliers of both new and second-hand machines must make sure that this manual is provided with the machine.**



# SAFETY RULES

**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by an operator's single careless act.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, judgement, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said "The best safety device is an informed, careful operator." We ask you to be that kind of operator.

## **TRAINING**

■ **Safety instructions are important! Read all attachment and power unit manuals; follow all safety rules and safety decal information. (Replacement manuals and safety decals are available from your dealer. To locate your nearest dealer, check the Dealer Locator at [www.WoodsEquipment.com](http://www.WoodsEquipment.com), or in the United States and Canada call 1-800-319-6637.) Failure to follow instructions or safety rules can result in serious injury or death.**

■ **If you do not understand any part of this manual and need assistance, see your dealer.**

■ **Know your controls and how to stop engine and attachment quickly in an emergency.**

■ **Operators must be instructed in and be capable of the safe operation of the equipment, its attachments, and all controls. Do not allow anyone to operate this equipment without proper instructions.**

■ **Never allow children or untrained persons to operate equipment.**

## **PREPARATION**

■ **Check that all hardware is properly installed. Always tighten to torque chart specifications unless instructed otherwise in this manual.**

■ **Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.**

■ **Make sure attachment is properly secured, adjusted, and in good operating condition.**

■ **Make sure the driveline spring-activated locking collar slides freely and is seated firmly in power unit PTO groove. Make sure the set screws securely attach driveline to the attachment gearbox shaft.**

■ **The safety interlock system was installed for your protection. Do not disconnect, disable, override, or execute any action that would cause this system to malfunction. If malfunction occurs, stop all operation and contact dealer for repair.**

■ **Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)**

■ **Make sure shields and guards are properly installed and in good condition. Replace if damaged.**

■ **When using weight transfer system, correct counterweight must be used to maintain stability. See counterweight chart in power unit manual or contact dealer.**

■ **When equipped with ROPS, total vehicle weight with all equipment, ballast, and operator must not exceed 2,590 lbs.**

■ **Inspect and clear area of stones, branches, or other hard objects that might be thrown, causing injury or damage.**

## **OPERATION**

■ **Never place any part of the body underneath implement/attachment or between its moving parts even when the engine has been turned off. Service work does not require going underneath unit. Mechanical failures, electrical failures, or operating controls can cause equipment to drop.**

■ **Never place hands or body into discharge chute or auger to unclog. Stored energy can cause auger to quickly rotate when unclogging occurs and cause severe injury or amputation. Stop engine, remove key, disconnect driveline, and carefully unclog, using a sturdy piece of wood.**

■ **Keep bystanders away from equipment.**

■ **Never direct discharge toward people, animals, or property.**

■ **Do not operate or transport equipment while under the influence of alcohol or drugs.**

■ **Operate only in daylight or good artificial light.**

■ **Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.**

# SAFETY RULES



**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



- When improperly operated, power unit can roll over or upset. Use of rollover protective structure (ROPS) with seat belt securely fastened will reduce the possibility of injury or death if rollover or upset occurs.
- Never allow riders on power unit or attachment.
- Do not operate PTO during transport.
- Do not operate auxiliary hydraulics during transport.
- Look down and to the rear and make sure area is clear before operating in reverse.
- Do not operate or transport on steep slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Watch for hidden hazards on the terrain during operation.
- Stop power unit and equipment immediately upon striking an obstruction. Turn off engine, remove key, inspect, and repair any damage before resuming operation.
- Do not operate power unit with attachment removed. Attachment is required for power unit stability.

## MAINTENANCE

- Do not modify or alter or permit anyone else to modify or alter the equipment or any of its components in any way.
- Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective

equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

- Make sure attachment is properly secured, adjusted, and in good operating condition.
- Never place any part of the body underneath implement/attachment or between its moving parts even when the engine has been turned off. Service work does not require going underneath unit. Mechanical failures, electrical failures, or operating controls can cause equipment to drop.
- Do not put Mow'n Machine into service unless clutch is working properly. When the engine is at full throttle, PTO-driven accessories must stop within five seconds after the PTO switch is turned to "OFF." See your dealer for replacement clutches.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Tighten all bolts, nuts, and screws to torque chart specifications. Check that all cotter pins are installed securely to ensure equipment is in a safe condition before putting unit into service.
- Make sure all safety decals are installed. Replace if damaged. (See Safety Decals section for location.)
- Make sure shields and guards are properly installed and in good condition. Replace if damaged.

## STORAGE

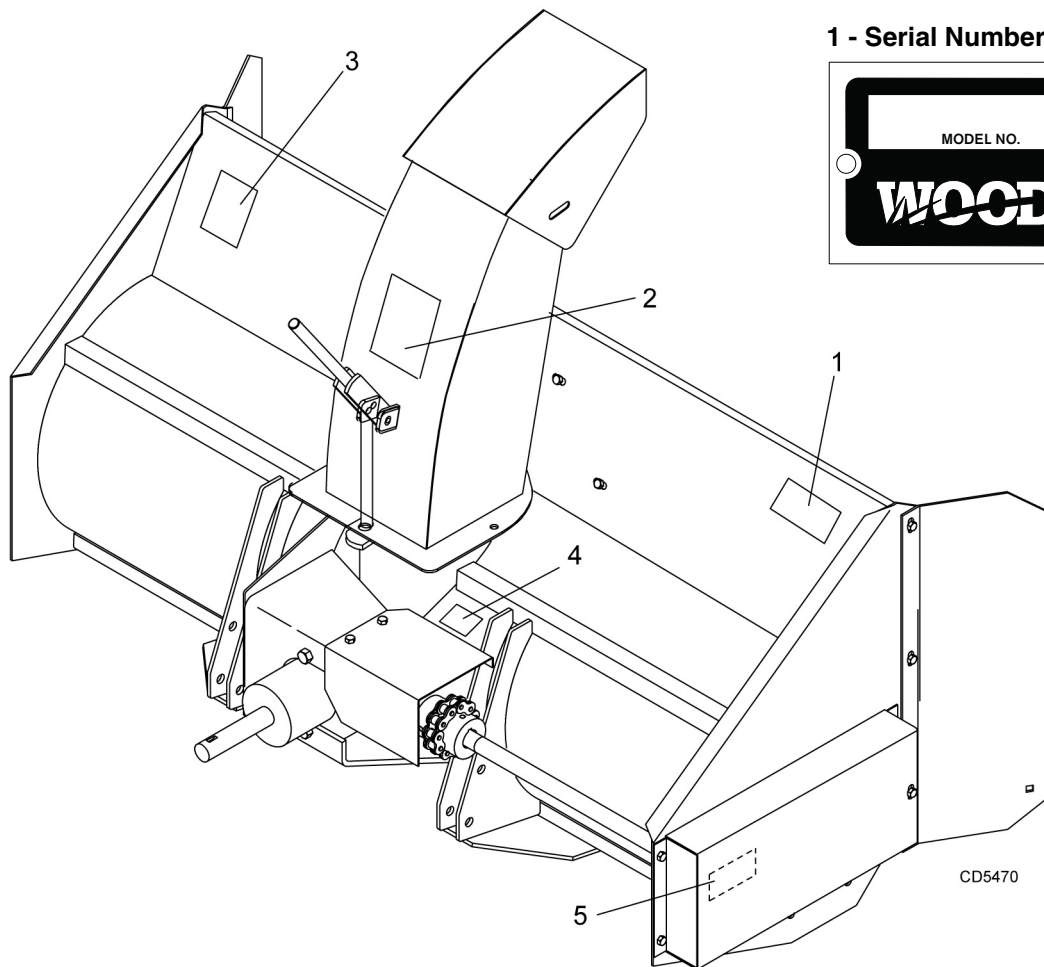
- Block equipment securely for storage.
- Keep children and bystanders away from storage area.



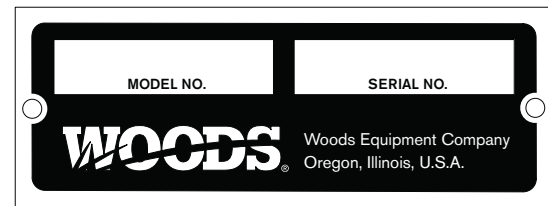


# SAFETY & INSTRUCTIONAL DECALS

**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**  
**Replace Immediately If Damaged!**



1 - Serial Number Plate



2 - 12030487A



3 - 12030480A



4 - 1004114



5 - 18869



# OPERATION



## WARNING

- **Keep hands, feet, hair, and clothing away from equipment while engine is running. Stay clear of all moving parts.**
- **Make sure shields and guards are properly installed and in good condition. Replace if damaged.**
- **Never place hands or body into discharge chute or auger to unclog. Stored energy can cause auger to quickly rotate when unclogging occurs and cause severe injury or amputation. Stop engine, remove key, disconnect driveline, and carefully unclog, using a sturdy piece of wood.**
- **Keep all persons away from operator control area while performing adjustments, service, or maintenance.**



## CAUTION

- **Stop power unit and implement immediately upon striking an obstruction. Dismount power unit, using proper procedure. Inspect and repair any damage before resuming operation.**

## IMPORTANT

- **When installing tire chains, be sure wheel spacer kit has been installed on both wheels. Chains will rub fenders if spacers are not installed. See your Mow'n Machine dealer for correct tire chains and spacer kits.**

### PRE-OPERATION CHECK LIST

(OWNER'S RESPONSIBILITY)

- \_\_\_ Check that all hardware and cotter pins are properly installed and secured.

- \_\_\_ Inspect area and remove stones, branches or other hard objects that might be thrown, causing injury or damage.
- \_\_\_ Do not allow riders.
- \_\_\_ Perform a functional check of the safety interlock system each time you operate the unit. Place both steering levers outward, start engine, engage PTO and then raise up out of the seat. The engine should die when you raise up. If it does not, do not operate unit until the safety interlock system has been repaired and operates properly.
- \_\_\_ Review and follow all safety rules and safety decal instructions on page 4 through page 6.
- \_\_\_ Check that all safety decals are installed and in good condition. Replace if damaged.
- \_\_\_ Check that all shields and guards are properly installed and in good condition. Replace if damaged.
- \_\_\_ Check that all hardware and cotter pins are properly installed and secured.

Be sure all fasteners on snowthrower and mounts are secure and all shields are in place before operating unit.

For clearing paved surfaces, adjust skids to allow bottom of auger housing to scrape the surface being cleared. For cleaning unpaved surfaces, adjust skids to raise bottom of auger housing 3/4" above surface to help avoid picking up rocks or other loose material. Be sure bottom surfaces of skids are parallel with surface being cleaned.

Adjust discharge spout and deflector to direct snow away from operator as much as possible. Do not direct discharge toward windows, bystanders or objects. Operate engine at 3/4 to full throttle.

Tire chains are available for added traction.



# OWNER SERVICE

The information in this section is written for operators who possess basic mechanical skills. If you need help, your dealer has trained service technicians available.

For your protection, read and follow all safety information in this manual.

Routine maintenance is not necessary for bearings or gearbox as they are permanently lubricated.

**NOTE:** If gearbox oil is removed, refill with 6 ounces of 80W-90 weight oil.

Auger drive chain, located under chain shield on right side of auger housing, should be checked for proper tension and lubricated at least each operating season or more frequently if used heavy. Lubricate chain with motor oil. Be sure to install chain shield after servicing.

Snowthrower skids are reversible. Move left skid to right side and right skid to left side, being sure to keep rounded end toward the front.

## WARNING

■ Before performing any service or maintenance, lower attachment to ground, turn off power unit engine, remove key, and disconnect battery ground cable (negative -).

## WARNING

■ Never place any part of the body underneath implement/attachment or between its moving parts even when the engine has been turned off. Service work does not require going underneath unit. Mechanical failures, electrical failures, or operating controls can cause equipment to drop.

## CAUTION

■ Always wear relatively tight and belted clothing to avoid getting caught in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head; and respirator or filter mask where appropriate.

## IMPORTANT

■ Do not use high-pressure water or steam to clean the engine or drive compartment. Water and cleaning detergent may damage electrical components and terminals, possibly leading to component and safety circuit failure.

---

## NOTES



# ASSEMBLY

## Snowthrower Set-up Instructions

Remove step and replace with the short step included with snowthrower. Remove cotter pin on end of step rod and slide out. Install shorter step and replace rod and cotter pin.

Slide lever mount (27) and lift mount (28) onto lift (29). Slide this assembly into tubes below footrest as shown in Figure 1. Secure with cap screws (73) and nuts (75) provided.

Attach snowthrower mount (26) to lower back side of auger housing with cap screws (59) and flange lock-nuts (69).

Refer to page 12. Attach upper spout (2) with cap screws (50), spacers (48), washers (49), lock washers (51) and hex nuts (52). Spout should be free to rotate approximately 180 degrees when spout handle (5) is pushed down to release spout lock.

## Attaching Snowthrower to Tractor

### **WARNING**

■ **Make sure the driveline spring-activated locking collar slides freely and is seated firmly in power unit PTO groove. Make sure the set screws securely attach driveline to the attachment gearbox shaft.**

The tractor must comply with counterweight requirements before attaching snowthrower. See Counterweight Requirement Chart in the tractor manual or contact your dealer.

Place tractor and snowthrower on a level surface. Shut off tractor engine and remove key.

Open tractor hydrostat dump valve and maneuver tractor behind snowthrower as close as possible. Connect driveline, Figure 1, to tractor PTO.

Attach snowthrower mount (26) to bottom holes of tractor mount as shown. Secure with attaching pins (63).

Install lift chains to lift chain mechanism and snowthrower mount. Adjust eyebolt for even lift.

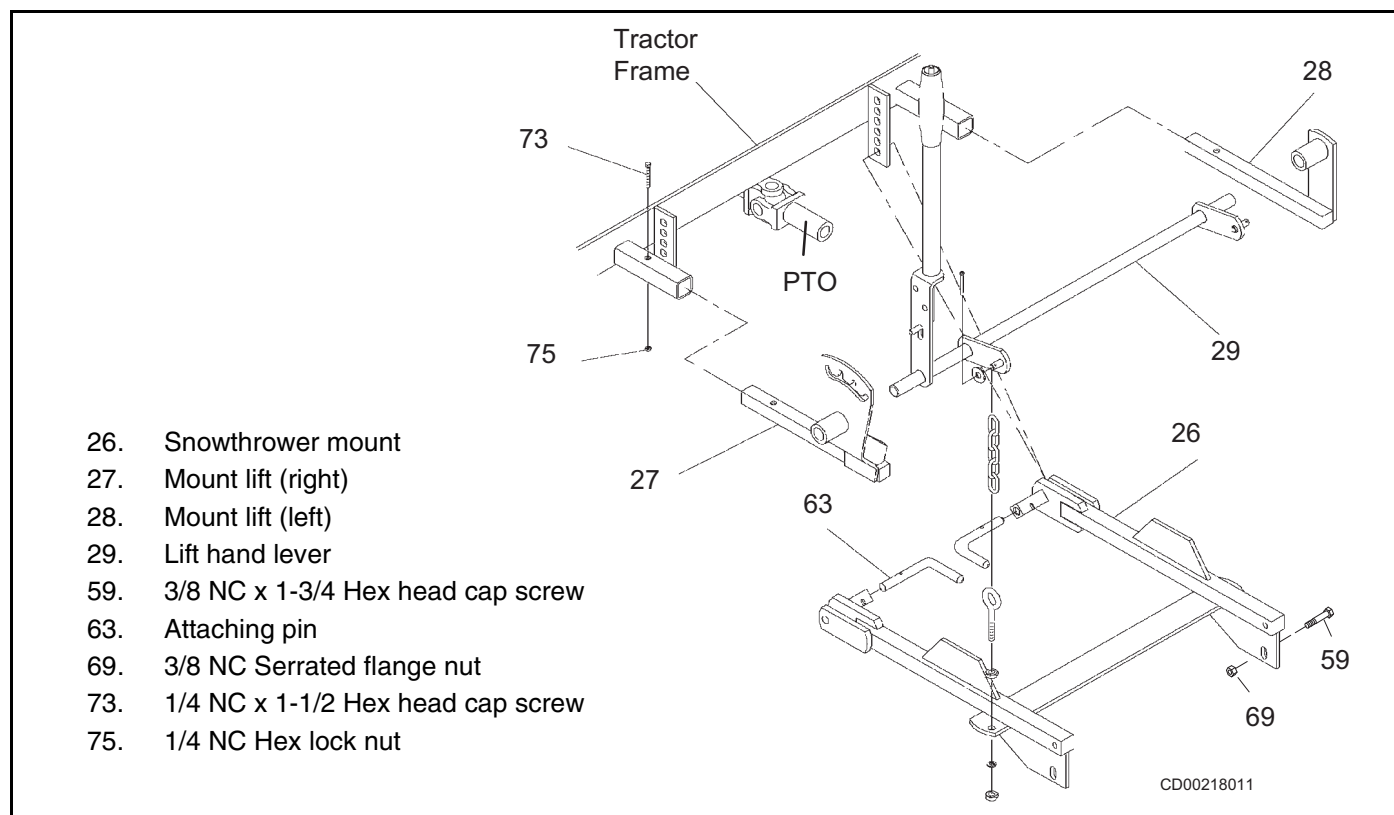


Figure 1. Snowthrower Attachment to Tractor

## Storage

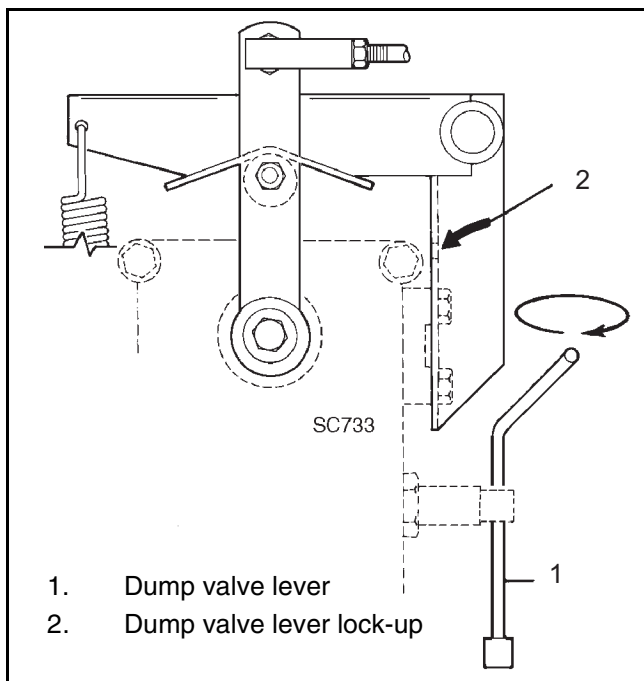
### **WARNING**

■ **Do not operate power unit with attachment removed. Attachment is required for power unit stability.**

Wood blocks can be used to support the rear of the snowthrower deck when not attached to the tractor. Raise snowthrower deck to it's highest height to provide the necessary clearance for installing blocks. Lower rear of snowthrower on blocks to take the weight off of the snowthrower lift components.

Disconnect PTO driveline, lift mounts (27 & 28) and spring-loaded mount pins (63). See Figure 1.

Open tractor hydrostat dump valves so that tractor can be maneuvered away from snowthrower. Refer to Figure 2.



**Figure 2.** Dump Valve

## CLEANING

### After Each Use

- Remove large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Inspect machine and replace worn or damaged parts.
- Replace any safety decals that are missing or not readable.

## Periodically or Before Extended Storage

- Clean large debris such as clumps of dirt, grass, crop residue, etc. from machine.
- Remove the remainder using a low-pressure water spray.
  1. Be careful when spraying near scratched or torn safety decals or near edges of decals as water spray can peel decal off surface.
  2. Be careful when spraying near chipped or scratched paint as water spray can lift paint.
  3. If a pressure washer is used, follow the advice of the pressure washer manufacturer.
- Inspect machine and replace worn or damaged parts.
- Sand down scratches and the edges of areas of missing paint and coat with Woods spray paint of matching color (purchase from your Woods dealer).
- Replace any safety decals that are missing or not readable (supplied free by your Woods dealer). See Safety Decals section for location drawing.

## PRE-DELIVERY CHECK LIST

Inspect the equipment thoroughly after assembly to ensure it is set up properly before delivering it to the customer.

- \_\_\_ Check that all safety decals are installed and in good condition. Replace if damaged.
- \_\_\_ Check that shields and guards are properly installed and in good condition. Replace if damaged.
- \_\_\_ Check that all cotter pins and safety pins are properly installed. Replace if damaged
- \_\_\_ Check and grease all lubrication points.

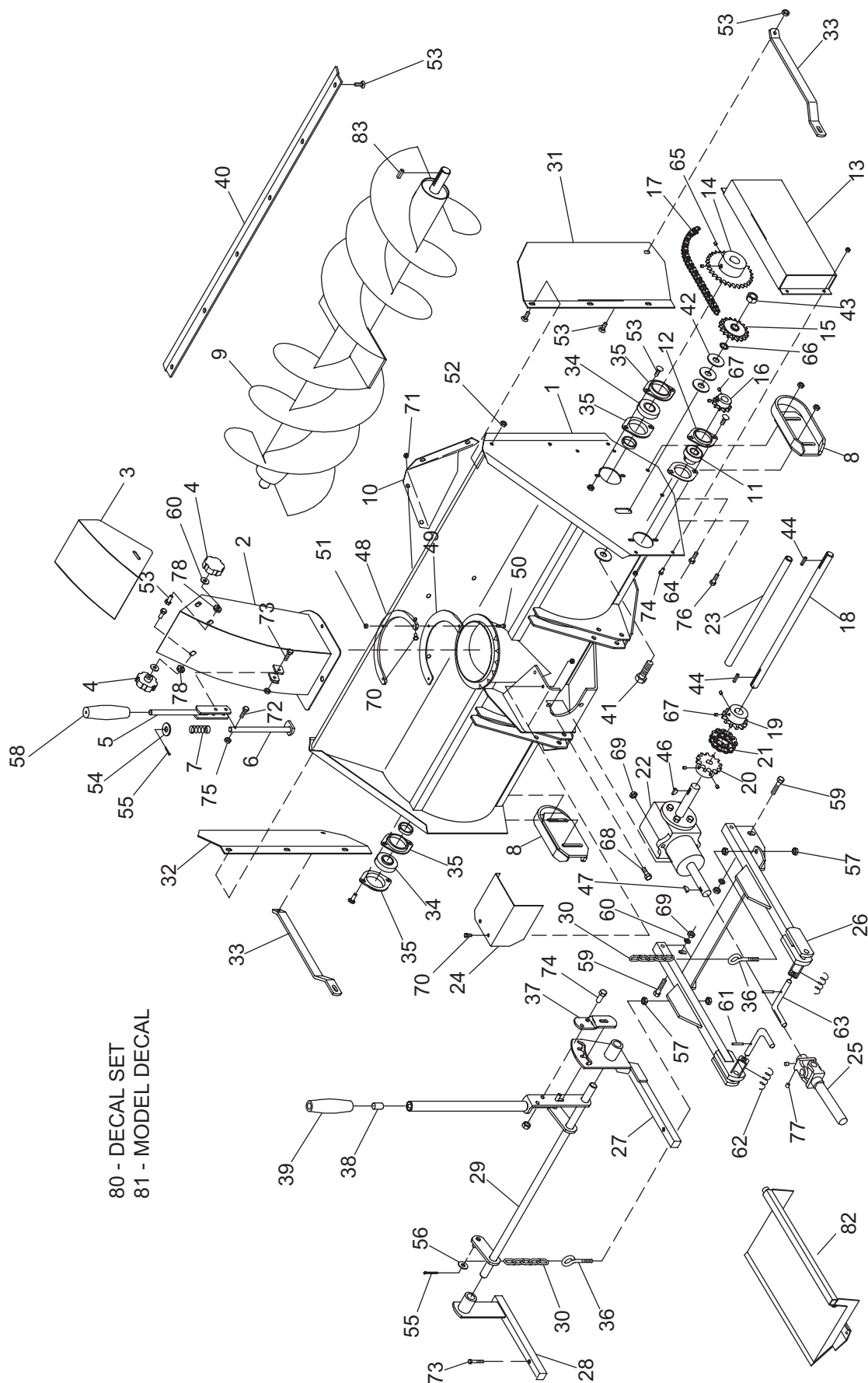
## DELIVERY CHECK LIST (DEALER'S RESPONSIBILITY)

- \_\_\_ Show customer how to make adjustments.
- \_\_\_ Show customer how to make sure driveline is properly installed and that spring-activated locking pin or collar slides freely and is seated in groove on tractor PTO shaft.
- \_\_\_ Explain to customer the potential crushing hazards of going underneath raised equipment. Instruct customer that service work does not require going underneath unit and never to do so.
- \_\_\_ Make customer aware of optional equipment available so that customer can make proper choices as required.

- \_\_\_\_ Present Operator's Manual and request that customer and all operators read it before operating equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.
  - \_\_\_\_ Point out the safety decals. Explain their meaning and the need to keep them in place and in good condition. Emphasize the increased safety hazards when instructions are not followed.
  - \_\_\_\_ Point out all guards and shields. Explain their importance and the safety hazards that exist when not kept in place and in good condition.
  - \_\_\_\_ Instruct customer how to lubricate and explain importance of lubrication.
- 

## NOTES

# ST500 SNOWTHROWER MAIN ASSEMBLY



80 - DECAL SET  
81 - MODEL DECAL

## ST500 SNOWTHROWER MAIN ASSEMBLY

REF	PART	QTY	DESCRIPTION	REF	PART	QTY	DESCRIPTION
1	72320	1	Auger housing	41	902	1	5/8 - 11 x 2 Hex head cap screw
2	12020152	1	Upper spout	42	692	4	5/8 Standard flat washer
3	12020145	1	Spout deflector	43	6239	1	5/8 NC Hex locknut
4	70454	2	Thumbscrew, 5/16 - female	44	70073	2	3/16 Square x 1 key
5	70455	1	Spout handle	46	62233	1	3/16 x 3/4 Woodruff key (output side)
6	12020240	1	Spout lock rod	47	64051	1	5/32 x 5/8 Woodruff key (input side)
7	70388	1	Compression spring, 3/4 x .08 x 2	48	12030807	1	Spout pivot spacer
8	72102	2	Skid	49	12030806	1	Spout retainer ring
9	70458	1	Auger, 1" shaft	50	10378	3	1/4 x 1 Hex head cap screw
10	70459	1	Snow deflector	51	62521	3	1/4 NC Flange whiz nut
11	70460	1	3/4 Ball bearing with locking collar	53	16148	16	5/16 NC x 3/4 Carriage bolt
12	70461	2	Bolt flange	54	3598	1	1/2 SAE Washer
13	72321	1	Chain shield	55	3597	3	1/8 x 1 Cotter pin
14	70463	1	Sprocket, 40B 30 x 1	56	565	2	3/8 Standard flat washer
15	70464	1	Idler, 40 - 18 x 5/8	57	835	6	3/8 - 16 Hex nut, plated
16	70465	1	Sprocket, 40B 11 x 3/4	58	70159	1	Handle grip .5
17	72322	1	#40 Chain	59	920	4	3/8 - 16 x 1-3/4 Hex head cap screw
18	70203	1	Power shaft	60	838	2	3/8 Lockwasher
19	70467	1	3/4 Coupling sprocket 50-12	61	4115	2	3/16 x 1-1/8 Roll pin
20	70468	1	7/8 Coupling sprocket	62	66510	2	Spring
21	70469	1	#50 Chain coupler	63	72403	2	Pin
22	70247	1	Gearbox, T 7/8 shaft	64	12169	2	3/8 NC x 1-1/4 Hex head cap screw GR5
23	70470	1	Shaft shield	65	90016237	2	5/16 x 5/16 Socket head set screw
24	70471	1	Shaft coupling shield	66	90011053	1	Machine bushing
25	74025	1	Drive half-F 6R, 11.5 -or-	67	67063	6	1/4 x 1/4 Socket set screw
25	65689	1	Cross & Bearing, Series 6N	68	62153	2	3/8 NC x 1 Whiz lock bolt
26	12020247	1	Snowthrower mount	69	14350	4	3/8 NC Serrated flanged hex locknut
27	12020272	1	Lever mount	70	5337	4	1/4 NC x 1/2 Hex head cap screw
28	12020273	1	Lift mount (left hand)	71	62521	6	1/4 NC Serrated flanged hex locknut
29	70727	1	Snowthrower lift	72	3184	1	1/4 NC x 1-1/4 Hex head cap screw
30	71170	2	Lift chain	73	62788	3	1/4 NC x 1-1/2 Hex head cap screw
31	70474	1	Right side extension	74	6096	2	5/16 NC x 3/4 Hex head cap screw
32	70475	1	Left side extension	75	6128	2	1/4 NC Self lock hex nut
33	70476	2	Extension brace	76	839	2	3/8 NC x 1 Hex head cap screw
34	70176	2	1" Ball bearing with locking collar	77	90016251	2	3/8 x 3/8 Socket set screw
35	70477	4	Bolt flange	78	90011132	2	5/16 Star washer
36	71171	2	3/8 - 16 x 2 Eyebolt	80	12010072	1	Decal package
37	12030442	1	Lever guide	81	12030808	1	ST500 Model decal
38	70766	1	Push rod grip	82	73926	1	Assy. foot rest, short
39	7530700	1	Handle grip, thumb release	83	6593	1	Key, 1/4 x 1/4 x 1
40	71172	1	Blade				

# BOLT TORQUE CHART

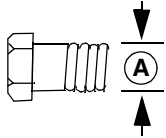
Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual parts list.

Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

Make sure fastener threads are clean and you start thread engagement properly.

All torque values are given to specifications used on hardware defined by SAE J1701 MAR 99 & J1701M JUL 96.



## SAE SERIES TORQUE CHART



**SAE Grade 2  
(No Dashes)**

SAE Bolt Head  
Identification

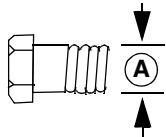


**SAE Grade 5  
(3 Radial Dashes)**



**SAE Grade 8  
(6 Radial Dashes)**

Ⓐ Diameter (Inches)	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
1/4"	7/16"	6	8	10	13	14	18
5/16"	1/2"	12	17	19	26	27	37
3/8"	9/16"	23	31	35	47	49	67
7/16"	5/8"	36	48	55	75	78	106
1/2"	3/4"	55	75	85	115	120	163
9/16"	13/16"	78	106	121	164	171	232
5/8"	15/16"	110	149	170	230	240	325
3/4"	1-1/8"	192	261	297	403	420	569
7/8"	1-5/16"	306	416	474	642	669	907
1"	1-1/2"	467	634	722	979	1020	1383



## METRIC SERIES TORQUE CHART



**Metric  
Grade 8.8**

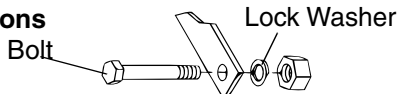
Metric Bolt Head  
Identification



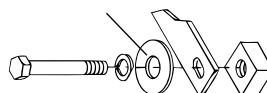
**Metric  
Grade 10.9**

Ⓐ Diameter & Thread Pitch (Millimeters)	Wrench Size	COARSE THREAD				FINE THREAD				Ⓐ Diameter & Thread Pitch (Millimeters)
		MARKING ON HEAD				MARKING ON HEAD				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m	lbs-ft	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 1.0
8 x 1.25	13 mm	20	15	27	20	21	16	29	22	8 x 1.0
10 x 1.5	16 mm	39	29	54	40	41	30	57	42	10 x 1.25
12 x 1.75	18 mm	68	50	94	70	75	55	103	76	12 x 1.25
14 x 2.0	21 mm	109	80	151	111	118	87	163	120	14 x 1.5
16 x 2.0	24 mm	169	125	234	173	181	133	250	184	16 x 1.5
18 x 2.5	27 mm	234	172	323	239	263	194	363	268	18 x 1.5
20 x 2.5	30 mm	330	244	457	337	367	270	507	374	20 x 1.5
22 x 2.5	34 mm	451	332	623	460	495	365	684	505	22 x 1.5
24 x 3.0	36 mm	571	421	790	583	623	459	861	635	24 x 2.0
30 x 3.0	46 mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0

### Typical Washer Installations



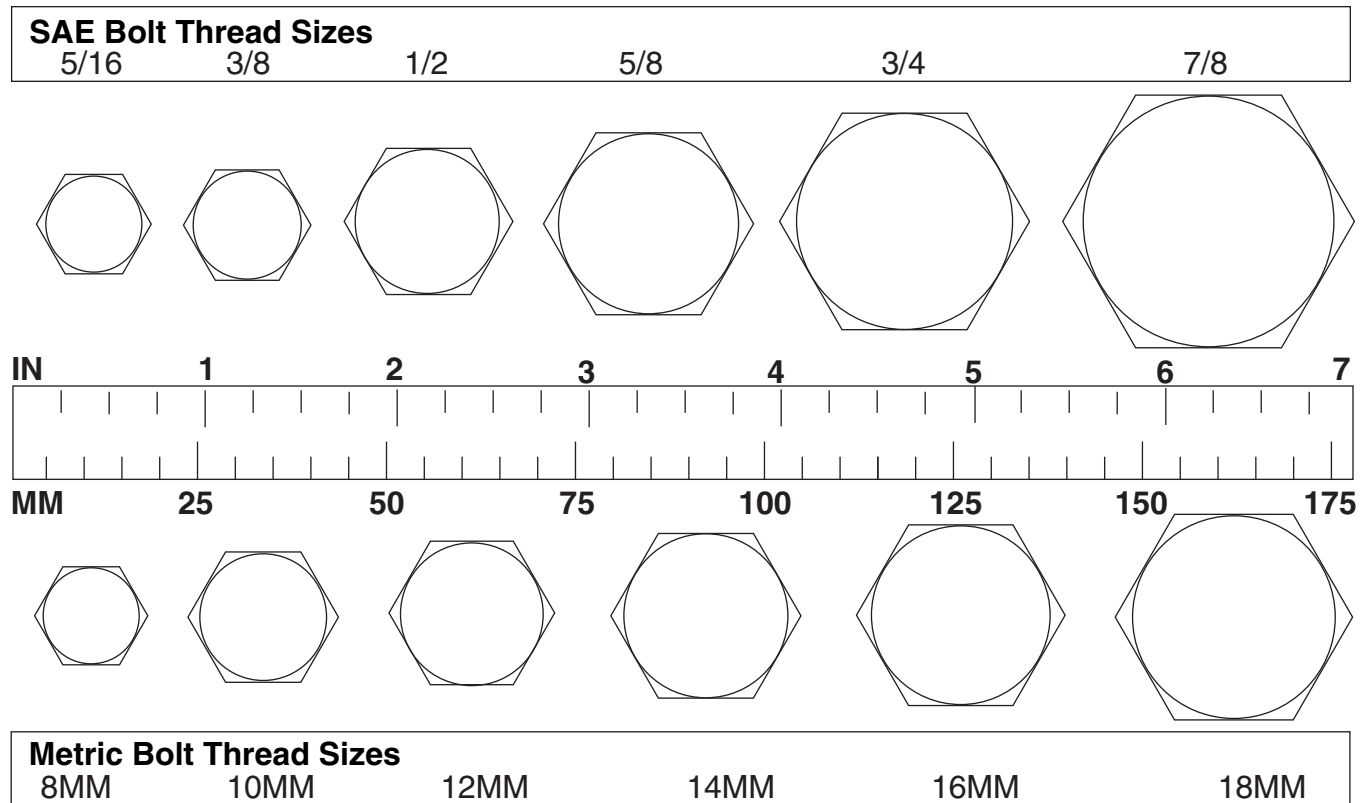
### Flat Washer



8/9/00

# BOLT SIZE CHART

**NOTE:** Chart shows bolt thread sizes and corresponding head (wrench) sizes for standard SAE and metric bolts.



## ABBREVIATIONS

AG ..... Agriculture  
 ASABE..... American Society of Agricultural & Biological Engineers (formerly ASAE)  
 ASAE ..... American Society of Agricultural Engineers  
 ATF ..... Automatic Transmission Fluid  
 BSPP ..... British Standard Pipe Parallel  
 BSPTM ..... British Standard Pipe Tapered Male  
 CV ..... Constant Velocity  
 CCW ..... Counter-Clockwise  
 CW..... Clockwise  
 F ..... Female  
 FT ..... Full Thread  
 GA ..... Gauge  
 GR (5, etc.) ..... Grade (5, etc.)  
 HHCS ..... Hex Head Cap Screw  
 HT ..... Heat-Treated  
 JIC ..... Joint Industry Council 37° Degree Flare  
 LH ..... Left Hand  
 LT ..... Left  
 m..... Meter  
 mm..... Millimeter  
 M..... Male

MPa..... Mega Pascal  
 N..... Newton  
 NC ..... National Coarse  
 NF ..... National Fine  
 NPSM..... National Pipe Straight Mechanical  
 NPT ..... National Pipe Tapered  
 NPT SWF ..... National Pipe Tapered Swivel Female  
 ORBM ..... O-Ring Boss - Male  
 P..... Pitch  
 PBY ..... Power-Beyond  
 psi..... Pounds per Square Inch  
 PTO ..... Power Take Off  
 QD ..... Quick Disconnect  
 RH ..... Right Hand  
 ROPS ..... Roll-Over Protective Structure  
 RPM ..... Revolutions Per Minute  
 RT ..... Right  
 SAE ..... Society of Automotive Engineers  
 UNC ..... Unified Coarse  
 UNF ..... Unified Fine  
 UNS..... Unified Special





## LIMITED WARRANTY

(Mow'n Machine™ Zero-Turn Mowers and Woods Boundary™ Utility Vehicles)

Please Enter Information Below and Save For Future Reference.

Date Purchased: \_\_\_\_\_

From (Dealer): \_\_\_\_\_

Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

### WHAT IS COVERED:

Woods Equipment Company ("WOODS") warrants Mow'n Machine™ zero-turn mowers and attachments and Woods Boundary™ utility vehicles, accessories and attachments to be free from defect in material and workmanship for the warranty periods listed below.

### FOR HOW LONG:

Mow'n Machine Model #CZ1736K, CZ1948K, CZ1952K, CZ2361, ME1952K, ME2661B, MZ2552K, MZ2561K, MZ2761, MZ3761K, MZ3772K, MZ2661KL & attachments are warranted for two (2) years from the date of delivery to the original purchaser or 2000 hours of operation, whichever occurs first. Purchaser may opt for a warranty of five (5) years from the date of delivery to the original purchaser or 500 hours of operation, whichever occurs first. The dealer must specify the special warranty term on the original, dated bill of sale and a copy must be provided with all warranty claims. Mow'n Machine model numbers CZR2242B and CZR2652B are warranted for residential use for three (3) years from the date of delivery to the original purchaser or for commercial use for 90 days from the date of delivery to the original purchaser.

Mow'n Machine Model #FE21B, FZ21D, FZ23B, FZ25D, FZ28K & attachments are warranted for two (2) years from the date of delivery to the original purchaser or 2000 hours of operation, whichever occurs first.

In addition, Mow'n Machine ME and MZ Series Models, serial number XXXXXXXX300 and above, have a Limited Lifetime Warranty on deck, deck cradle, and engine deck for the life of the machine to the original retail purchaser.

Woods Boundary utility vehicle Model #MAV350, MAV480, MAV4x4, accessories & attachments are warranted for two (2) years from the date of delivery to the original purchaser.

IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN WARRANTY PERIODS LISTED ABOVE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

### WHO IS COVERED:

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer the product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

### WHAT IS NOT COVERED:

This Warranty does not cover normal wear or tear, or normal maintenance items, or any damage, failure or loss caused by:

1. Improper operation, improper maintenance, misuse, or an accident;
2. Any modification or repair by someone other than WOODS, a WOODS' authorized dealer or distributor, and/or a WOODS' authorized service center; or
3. Repairs made with parts other than those obtained through WOODS.

WOODS makes no warranty, express or implied, with respect to engines, batteries, tires or other parts or accessories with respect to which the manufacturer provides a separate warranty.

### WHAT WOODS WILL DO TO CORRECT PROBLEMS:

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if the product is defective or in noncompliance with this Warranty. The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid. WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product.

### OTHER LIMITATIONS:

WOODS shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory. Without limiting the foregoing, WOODS shall not be liable for any damages relating to (i) lost profits, business, revenues or goodwill; (ii) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (iii) any other type of damage to property or economic loss. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

No agent, representative, dealer, distributor, service person, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

### HOW STATE LAW APPLIES:

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

### QUESTIONS:

Answers to any questions regarding warranty service and locations may be obtained by contacting:

#### Woods Equipment Company

2606 South Illinois Route 2  
Post Office Box 1000  
Oregon, Illinois 61061

800-319-6637 tel  
800-399-6637 fax  
www.WoodsEquipment.com

**WOODS**®

**ALITEC**™

**BMP**®

**CENTRAL FABRICATORS**®

**GANNON**®

**GILL**®

**WAIN-ROY**®

**WOODS**®



## LIMITED WARRANTY

(Mow'n Machine™ Zero-Turn Mower and  
Woods Boundary™ Utility Vehicle Replacement Parts)

Woods Equipment Company ("WOODS") warrants replacement parts for Mow'n Machine™ zero-turn mowers and attachments and Woods Boundary™ utility vehicles, accessories and attachments to be free from defect in material and workmanship for a period of ninety (90) days from the date of delivery of the product to the original purchaser.

IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO A PERIOD OF NINETY (90) DAYS FROM THE DATE OF DELIVERY OF THE PRODUCT TO THE ORIGINAL PURCHASER. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This Warranty is extended solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer the product to a third party, this Warranty does not transfer to the third party purchaser in any way. There are no third party beneficiaries of this Warranty.

This Warranty does not cover normal wear or tear, or normal maintenance items, or any damage, failure or loss caused by improper operation, improper maintenance, misuse, or an accident.

WOODS' obligation under this Warranty is limited to, at WOODS' option, the repair or replacement, free of charge, of the product if the product is defective or in noncompliance with this Warranty. **The product must be returned to WOODS with proof of purchase within thirty (30) days after such defect or noncompliance is discovered or should have been discovered, routed through the dealer and distributor from whom the purchase was made, transportation charges prepaid.** WOODS shall complete such repair or replacement within a reasonable time after WOODS receives the product.

**WOODS shall not be liable for any incidental or consequential losses, damages or expenses, arising directly or indirectly from the product, whether such claim is based upon breach of contract, breach of warranty, negligence, strict liability in tort or any other legal theory.** Without limiting the foregoing, WOODS shall not be liable for any damages relating to (i) lost profits, business, revenues or goodwill; (ii) any expense or loss incurred for labor, supplies, substitute machinery or rental; or (iii) any other type of damage to property or economic loss. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

No agent, representative, dealer, distributor, service person, salesperson, or employee of any company, including without limitation, WOODS, its authorized dealers, distributors, and service centers, is authorized to alter, modify, or enlarge this Warranty.

This Warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

Answers to any questions regarding warranty service and locations may be obtained by contacting:

**WOODS®**

**ALITEC™**  
**BMP®**  
**CENTRAL FABRICATORS®**  
**GANNON®**  
**GILL®**  
**WAIN-ROY®**  
**WOODS®**

**Woods Equipment  
Company**

2606 South Illinois Route 2  
Post Office Box 1000  
Oregon, Illinois 61061 USA

800-319-6637 tel  
800-399-6637 fax  
[www.WoodsEquipment.com](http://www.WoodsEquipment.com)



©2001 Woods Equipment Company. All rights reserved. WOODS and the Woods logo are trademarks of Woods Equipment Company. All other trademarks, trade names, or service marks not owned by Woods Equipment Company that appear in this manual are the property of their respective companies or mark holders. Specifications subject to change without notice.